

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

- Sub C1* 1. A container for transporting bulk material including two side walls, two end walls and a base, wherein at least one said side wall includes at least one internal ridge running along said at least one side wall between said end walls, and wherein said ridge is integrally formed within said at least one side wall.
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Z* 2. A container for transporting bulk material including two side walls, two end walls, and a base; said side walls including a plurality of vertical reinforcing members spaced along the length of said side wall, wherein said side wall between at least one adjacent pair of said reinforcing members includes at least one internal ridge running therebetween, wherein said ridge is integrally formed within said side wall.
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Z* 3. A container as claimed in claim 2 further including at least one internal ridge between each of said reinforcing members.
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Z* 4. A container as claimed in claim 2 or 3 including additional reinforcement aligned along said internal ridge between each of said reinforcing members.
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Z* 5. A container as claimed in any one of claims 2 to 4, further including at least one internal ridge between one said end wall and a first reinforcing member.
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Z* 6. A container as claimed in any preceding claim wherein said ridge includes a first wall portion angled from said wall towards the interior of said container, and a second wall portion rejoining said first wall portion to said wall.
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Z* 7. A container as claimed in any one of claims 1 to 5, adapted for unloading of material through the base of the container, wherein said ridge includes a first wall portion angled from said wall away from the interior of said container, and a second wall portion rejoining said first wall portion to said wall.
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Z* 8. A container as claimed in claim 6 or claim 7 wherein the angle of said first

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12

wall portion is in the direction of flow during unloading of the material to be transported.

Claim 1

9. A container as claimed in ~~any one of claims 1 to 5~~, wherein said internal ridge includes a first wall portion deflected inwardly a progressively increased degree relative to the intersection of said side wall and said base, and a second wall portion extending from said first wall portion and being deflected outwardly a progressively decreased degree relative to the intersection of said side wall and said base.

Claim 1

Sub B7
10. A container as claimed in ~~any one of claims 1 to 9~~ wherein said first wall portion extends from said side wall at an angle θ_1 , wherein:

$$\theta_1 \leq \theta_2 - \theta_3 - 90^\circ$$

where:

θ_1 - is the angle between said side wall and said first wall portion,

θ_2 - is the angle said container is rotated during unloading of said container, and

θ_3 - is the natural angle of repose of material to be transported in said container.

Claim 1

11. A container as claimed in ~~any one of claims 1 to 9~~ wherein said first wall portion extends from said side wall at an angle θ_1 , wherein:

$$\theta_1 \leq \theta_2 - \theta_3 - \theta_4 - 90^\circ$$

where:

θ_1 - is the angle between said side wall and said first wall portion,

θ_2 - is the angle said container is rotated during unloading of said container,

θ_3 - is the natural angle of repose of material to be transported in said container, and

θ_4 - is the cohesion of said material to be transported when wet.

C

12. A container as claimed in ~~any one of claims 1 to 9~~ adapted for unloading of material through the base of the container, and wherein said first wall portion extends from said side wall at an angle θ_1 , wherein:

$$\theta_1 \leq 90^\circ - \theta_3$$

where:

θ_1 - is the angle between said side wall and said first wall portion, and

θ_3 - is the natural angle of repose of material to be transported in said container.

B18

A

13. A container as claimed in ~~any one of claims 1 to 9~~ adapted for unloading of material through the base of the container, and wherein said first wall portion extends from said side wall at an angle θ_1 , wherein:

$$\theta_1 \leq 90^\circ - \theta_3 - \theta_4$$

where:

θ_1 - is the angle between said side wall and said first wall portion,

θ_3 - is the natural angle of repose of material to be transported in said container, and

θ_4 - is the cohesion of said material to be transported when wet.

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14. A container as claimed in ~~any preceding claim~~ wherein said first and second wall portions are symmetrical.

A

15. A container as claimed in ~~any preceding claim~~ wherein said second wall portion is convex or concave.

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16. A container as claimed in ~~one of claims 6 to 15~~, wherein said first wall portion is aligned with the flow of material during unloading of said container.

A

17. A container as claimed in ~~any one of claims 6 to 16~~, wherein said ridge further includes a third wall portion between said first wall portion and said second wall portion.

Received 14 December 1999

14

18. A container as claimed in claim 17 wherein said third wall portion is concave.

19. A container as claimed in claim 17 wherein said third wall portion is flat or straight.

20. A container as claimed in claim 19 wherein said third wall portion is parallel to said side wall.

21. A container as claimed in claim 19 wherein said third wall portion is angled relative to said side wall.

22. A container as claimed in ^{Claim 17} ~~any one of claims 17 to 21~~ wherein said first wall portion is equal to or longer than said third wall portion.

23. A container as claimed in ^{Claim 6} ~~any one of claims 6 to 22~~, wherein at least one said side wall further includes a partial ridge along the top or rim of said at least one side wall, said partial ridge being formed by a fourth wall portion, said fourth wall portion being equivalent to said first wall portion.

24. A container as claimed in claim 23, wherein said fourth wall portion is of equal length to said first wall portion.

25. A container as claimed in claim 23 or 24 wherein said partial ridge further includes a strengthening member along the periphery of said fourth wall portion, said strengthening member forming the rim of said container.

26. A container as claimed in claim 25, wherein said strengthening member is integrally formed within said at least one side wall.

27. A container as claimed in ^{Claim 1} ~~any preceding claim~~ wherein said base of said container includes at least one ridge extending substantially along the length of said base.

(W/C) 28. A container as claimed in claim 27 wherein said at least one ridge along said base is located about wheel or track positions of a support for said container.

(C) 29. A container substantially as hereinbefore described with reference to figures 2a, 2b, 3a, 3b, 4b, 6 or 8.

(C) 30. A container as claimed in ~~any preceding claim~~ for use in transportation of bulk material by road.

(C) 31. A container as claimed in ~~any preceding claim~~ for use in transportation of bulk material by rail.